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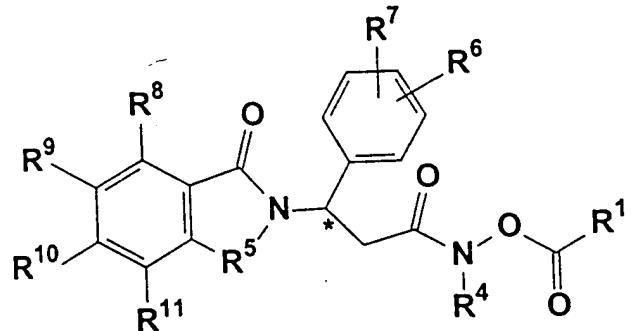
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We claim:

1 1. An acylhydroxamic acid derivative selected from the group consisting of
2 (a) compounds of the formula:



3

4 wherein

5 the carbon atom designated * constitutes a center of chirality,

6 R⁴ is hydrogen or -(C=O)-R¹²;

7 each of R¹ and R¹², independently of each other, is alkyl of 1 to 6 carbon atoms,
8 phenyl, benzyl, pyridyl methyl, pyridyl, imidazoyl, imidazolyl methyl, or
9 $\text{CHR}^*(\text{CH}_2)_n\text{NR}^*\text{R}^0$

10 wherein R* and R⁰, independently of the other, are hydrogen, alkyl of 1 to 6
11 carbon atoms, phenyl, benzyl, pyridylmethyl, pyridyl, imidazoyl or
12 imidazolymethyl, and n = 0, 1, 2;

13 R⁵ is C=O, CH₂, CH₂-CO-, or SO₂;

14 each of R⁶ and R⁷, independently of the other, is nitro, cyano, trifluoromethyl,
15 carbethoxy, carbomethoxy, carbopropoxy, acetyl, carbamoyl, acetoxy,
16 carboxy, hydroxy, amino, alkyl of 1 to 6 carbon atoms, alkoxy of 1 to 6 carbon
17 atoms, cycloalkoxy of 3 to 8 carbon atoms, halo, bicycloalkyl of up to 18
18 carbon atoms, tricycloalkoxy of up to 18 carbon atoms, 1-indanyloxy, 2-
19 indanyloxy, C₄-C₈-cycloalkyldenemethyl, or C₃-C₁₀-alkyldenemethyl;

20

1 each of R^8 , R^9 , R^{10} , and R^{11} , independently of the others, is

2 (i) hydrogen, nitro, cyano, trifluoromethyl, carbethoxy, carbomethoxy,
3 carbopropoxy, acetyl, carbamoyl, acetoxy, carboxy, hydroxy, amino,
4 alkylamino, dialkylamino, acylamino, alkyl of 1 to 10 carbon atoms, alkoxy of 1
5 to 10 carbon atoms, halo, or

6 (ii) one of R^8 , R^9 , R^{10} , and R^{11} is acylamino comprising a lower alkyl, and the
7 remaining of R^8 , R^9 , R^{10} , and R^{11} are hydrogen, or

8 (iii) hydrogen if R^8 and R^9 taken together are benzo, quinoline, quinoxaline,
9 benzimidazole, benzodioxole, 2-hydroxybenzimidazole,
10 methylenedioxy, dialkoxy, or dialkyl, or

11 (iv) hydrogen if R^{10} and R^{11} , taken together are benzo, quinoline, quinoxaline,
12 benzimidazole, benzodioxole, 2-hydroxybenzimidazole,
13 methylenedioxy, dialkoxy, or dialkyl, or

14 (v) hydrogen if R^9 and R^{10} taken together are benzo; and

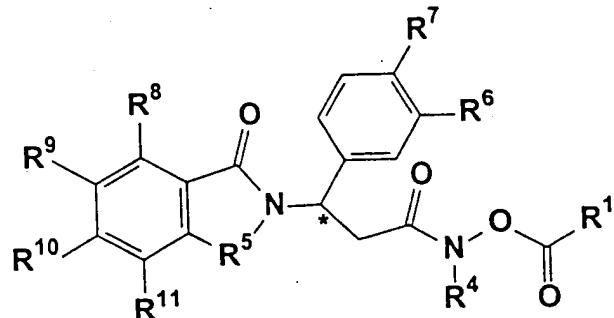
15 (b) The acid addition salts of said compounds which contain a nitrogen atom
16 capable of being protonated.

17 2. An acylhydroxamic acid derivative according to claim 1 wherein each of R^8 , R^9 ,
18 R^{10} , and R^{11} is hydrogen, halo, alkyl of 1 to 4 carbon atoms, or alkoxy of 1 to 4
19 carbon atoms.

20 3. An acylhydroxamic acid derivative according to claim 1 wherein one of R^8 , R^9 ,
21 R^{10} , and R^{11} is amino, alkyl amino, dialkyl amino, or acyl amino, alkyl of 1 to 10
22 carbon atoms, alkoxy of 1 to 10 carbon atoms, or hydroxy, and the remaining of
23 R^8 , R^9 , R^{10} , and R^{11} are hydrogen.

24 4. An acylhydroxamic acid derivative according to claim 1 wherein R^8 , R^9 , R^{10} , and
25 R^{11} are hydrogen.

1 5. An acylhydroxamic acid derivative according to claim 1 wherein said compound
2 has the formula:



in which

the carbon atom designated * constitutes a center of chirality;

R^4 is hydrogen or $-(C=O)-R^{12}$, where

10 each of R¹ and R¹², independently of each other, is alkyl of 1 to 6 carbon
11 atoms, phenyl, benzyl, pyridyl, pyridyl methyl, imidazolyl, imidazolylmethyl, or
12 $\text{CHR}^*(\text{CH}_2)_n\text{NR}^*\text{R}^0$

wherein R* and R⁰, independently of the other, are hydrogen, alkyl of 1 to 6 carbon atoms, phenyl, benzyl, pyridylmethyl, pyridyl, imidazoyl or imidazolylmethyl, and n = 0, 1, 2;

R^5 is $C=O$ or CH_2 :

17 each of R⁶ and R⁷, independently of the other is alkoxy of 1 to 8 carbon atoms,
18 cycloalkoxy of 3 to 6 carbon atoms; C₄-C₆-cycloalkylidenemethyl, C₂-C₁₀-
19 alkylidenemethyl, C₆-C₁₈-bicycloalkoxy, C₆-C₁₈-tricycloalkoxy, 1-indanyloxy,
20 2-indanyloxy; and

21 each of R⁸, R⁹, R¹⁰, and R¹¹, independently of the others, is hydrogen, nitro,
22 cyano, trifluoromethyl, carbethoxy, carbomethoxy, carbopropoxy, acetyl, halo,
23 carbamoyl, acetoxy, carboxy, hydroxy, amino, alkylamino, dialkylamino,
24 acylamino, alkyl of 1 to 10 carbon atoms, and alkoxy of 1 to 10 carbon atoms

1 6. An acylhydroxamic acid derivative according to claim 5, wherein
2 each of R^8 , R^9 , R^{10} , and R^{11} , independently of the others, is
3 hydrogen, alkyl of 1 to 4 carbon atoms, halo, or alkoxy of 1 to 4 carbon atoms.

4 7. An acylhydroxamic acid derivative according to claim 5 wherein one of R^8 , R^9 ,
5 R^{10} , and R^{11} is acylamino, amino, hydroxy, alkyl of 1 to 10 carbon atoms, and
6 the remaining of R^8 , R^9 , R^{10} , and R^{11} , are hydrogen.

7 8. An acylhydroxamic acid derivative according to claim 5, wherein
8 R^8 , R^9 , R^{10} , and R^{11} are
9 (a) at least one alkyl of 1 to 10 carbon atoms with the remainder of R^8 , R^9 ,
10 R^{10} , and R^{11} being hydrogen, or
11 (b) at least one alkoxy of 1 to 10 carbon atoms with the remainder
12 of R^8 , R^9 , R^{10} , and R^{11} being hydrogen.

13 9. An acylhydroxamic acid derivative according to claim 5 wherein R^8 , R^9 , R^{10} , and
14 R^{11} are hydrogen.

15 10. An acylhydroxamic acid derivative according to claim 5 wherein one of R^8 , R^9 ,
16 R^{10} , and R^{11} is acylamino and the remaining of R^8 , R^9 , R^{10} , and R^{11} are
17 hydrogen.

18 11. An acylhydroxamic acid derivative according to claim 5 wherein two of R^8 , R^9 ,
19 R^{10} , and R^{11} are hydrogen and the remaining of R^8 , R^9 , R^{10} , and R^{11} ,
20 independent of each other, are alkyl of 1 to 10 carbon atoms, alkoxy of 1 to 10
21 carbon atoms, amino, or acylamino.

22 12. An acylhydroxamic acid derivative according to claim 5 wherein R^4 is hydrogen.

23 13. An acylhydroxamic acid derivative according to claim 5 wherein R^4 is
24 $-(C=O)-R^{12}$, and where R^{12} is a lower alkyl of 1 to 6 carbon atoms.

1 14. An acylhydroxamic acid derivative according to claim 5, wherein
2 R^4 is hydrogen;
3 R^5 is C=O;
4 R^8 is hydrogen; and
5 one of R^9 and R^{11} is hydrogen and the other of R^9 and R^{11} , taken together with
6 R^{10} , is benzo.

7 15. An acylhydroxamic acid derivative according to claim 5, wherein
8 R^4 is hydrogen;
9 R^5 is C=O;
10 R^8 and R^9 are hydrogen; and
11 R^{10} and R^{11} , taken together, are methylenedioxo or dialkoxy.

12 16. An acylhydroxamic acid derivative according to claim 5, wherein
13 R^7 is methoxy; and
14 R^6 is ethoxy, cyclopentoxy, or isopropoxy.

15 17. An acylhydroxamic acid derivative according to claim 5 wherein R^6 and R^7 are
16 independently of each other, alkoxy or 1 to 10 carbon atoms, cycloalkoxy, or
17 bicycloalkoxy.

18 18. An acylhydroxamic acid derivative according to claim 1, which is a substantially
19 chirally pure (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture
20 thereof.

21 19. A pharmaceutical composition comprising a quantity of an acylhydroxamic acid
22 derivative according to claim 1, which derivative is a substantially chirally pure
23 (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture thereof,

1 sufficient upon administration in a single or multiple dose regimen to reduce or
2 inhibit levels of TNF α or in a mammal in combination with a carrier.

3 20. A pharmaceutical composition comprising a quantity of an acylhydroxamic acid
4 derivative according to claim 1, which derivative is a substantially chirally pure
5 (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture thereof, sufficient
6 upon administration in a single or multiple dose regimen to inhibit undesirable
7 levels of at least one of matrix metalloproteinases and PDE 4 in a mammal in
8 combination with a carrier.

9 21. A method of inhibiting undesirable levels of TNF α in a mammal which comprises
10 administering thereto an effective amount of an acylhydroxamic acid derivative
11 according to claim 1, which derivative is a substantially chirally pure (R)-isomer, a
12 substantially chirally pure (S)-isomer, or a mixture thereof.

13 22. A method of inhibiting undesirable levels of matrix metalloproteinases in a
14 mammal which comprises administering thereto an effective amount of an
15 acylhydroxamic acid derivative according to claim 1, which derivative is a
16 substantially chirally pure (R)-isomer, a substantially chirally pure (S)-isomer, or a
17 mixture thereof.

18 23. A method of treating in a mammal a disease selected from the group consisting of
19 inflammatory disease and autoimmune disease, which comprises administering
20 thereto an effective amount of a compound according to claim 1, which compound
21 is a substantially chirally pure (R)-isomer, a substantially chirally pure (S)-isomer,
22 or a mixture thereof.

23 24. A method according to claim 23 wherein the disease is at least one member
24 selected from the group of arthritis, rheumatoid arthritis, inflammatory bowel

1 disease, Crohn's disease, aphthous ulcers, cachexia, graft versus host disease,
2 asthma, COPD, psoriasis, atopic dermatitis, Lupus, adult respiratory distress
3 syndrome, and acquired immune deficiency syndrome.

4 25. A method of treating cancer in a mammal which comprises administering thereto
5 an effective amount of a compound according to claim 1, which compound is a
6 substantially chirally pure (R)-isomer, a substantially chirally pure (S)-isomer, or a
7 mixture thereof.

8 26. A method of treating undesirable angiogenesis in a mammal which comprises
9 administering thereto an effective amount of a compound according to claim 1,
10 which compound is a substantially chirally pure (R)-isomer, a substantially chirally
11 pure (S)-isomer, or a mixture thereof.

12 27. A method of inhibiting phosphodiesterases type IV or PDE 4 in a mammal which
13 comprises administering thereto an effective amount of an acylhydroxamic acid
14 derivative according to claim 1, which derivative is a substantially chirally pure
15 (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture thereof.

16 28. An acylhydroxamic acid derivative according to claim 1, wherein the compound is
17 selected from the group consisting of a substantially chirally pure (R)-isomer, a
18 substantially chirally pure (S)-isomer, or a mixture thereof, where the isomer is (3-
19 (1,3-dioxoisooindolin-2-yl)-3-(3-ethoxy-4-methoxyphenyl)propanoylamino)
20 propanoate; (3-(1,3-dioxoisooindolin-2-yl)-3-(3-ethoxy-4-methoxyphenyl)
21 propanoylamino) acetate; (3-(1,3-dioxoisooindolin-2-yl)-3-(3-ethoxy-4-methoxy
22 phenyl)propanoylamino) pentanoate; (3-(1,3-dioxoisooindolin-2-yl)-3-(3-ethoxy-4-
23 methoxyphenyl)propanoylamino) benzoate; (3-(3-cyclopentyloxy-4-methoxy
24 phenyl)-3-(1-oxoisooindolin-2-yl)propanoylamino) acetate; (3-[4-(acetylamino)-1,3-

1 dioxoisooindolin-2-yl]-3-(3-ethoxy-4-methoxyphenyl) propanoylamino) acetate; (3-
2 (3-ethoxy-4-methoxyphenyl)-3-(4-methyl-1,3-dioxoisooindolin-2-yl)propanoyl-
3 amino) acetate; (3-(3-ethoxy-4-methoxyphenyl)-3-(5-methyl-1,3-dioxoisooindolin-2-
4 yl)propanoylamino) acetate; (3-(3-cyclopentyloxy-4-methoxyphenyl)-3-(4-methyl-
5 1,3-dioxoisooindolin-2-yl)propanoylamino) acetate; (3-(3-cyclopentyloxy-4-
6 methoxyphenyl)-3-(5-methyl-1,3-dioxoisooindolin-2-yl)propanoylamino) acetate; -N-
7 acetyl-3-(3-ethoxy-4-methoxyphenyl)-3-(5-methyl-1,3-dioxoisooindolin-2-
8 yl)propanoylamino) acetate; N-acetyl-3-(3-cyclopentyloxy-4-methoxyphenyl)-3-(4-
9 methyl-1,3-dioxoisooindolin-2-yl)propanoylamino) acetate; (3-[5-(acetylamino)-1,3-
10 dioxoisooindolin-2-yl]-3-(3-ethoxy-4-methoxyphenyl)propanoylamino) acetate; (3-
11 (1,3-dioxobenzo[e] isoindolin-2-yl)-3-(3-ethoxy-4-methoxyphenyl) propanoyl-
12 amino) acetate; (3-(3-ethoxy-4-methoxyphenyl)-3-phthalimido-propanoylamino)
13 pyridine-3-carboxylate; (3-[4-(acetylamino)-1,3-dioxoisooindolin-2-yl]-3-(3-
14 cyclopentyloxy-4-methoxyphenyl)propanoylamino) acetate; (N-acetyl-3-[4-
15 (acetylamino)-1,3-dioxoisooindolin-2-yl]-3-(3-cyclopentyloxy-4-methoxyphenyl)
16 propanoylamino) acetate; or (3-(3-ethoxy-4-methoxyphenyl)-3-(1-oxoisooindolin-2-
17 yl)propanoylamino) acetate.

18 29. An acylhydroxamic acid derivative according to claim 5, which is a substantially
19 chirally pure (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture
20 thereof.

21 30. A pharmaceutical composition comprising a quantity of an acylhydroxamic acid
22 derivative according to claim 5, which derivative is a substantially chirally pure
23 (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture thereof, sufficient
24 upon administration in a single or multiple dose regimen to reduce or inhibit levels
25 of TNF α in a mammal in combination with a carrier.

1 31. A pharmaceutical composition comprising a quantity of an acylhydroxamic acid
2 derivative according to claim 5, which derivative is a substantially chirally pure
3 (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture thereof, sufficient
4 upon administration in a single or multiple dose regimen to inhibit undesirable
5 levels of matrix metalloproteinases or PDE 4 in a mammal in combination with a
6 carrier.

7 32. A method of reducing or inhibiting undesirable levels of TNF α in a mammal which
8 comprises administering thereto an effective amount of an acylhydroxamic acid
9 derivative according to claim 5, which derivative is a substantially chirally pure
10 (R)-isomer, a substantially chirally pure (S)-isomer, or a mixture thereof.

11 33. A method of inhibiting undesirable levels of matrix metalloproteinases in a
12 mammal which comprises administering thereto an effective amount of an
13 acylhydroxamic acid derivative according to claim 5, which derivative is a
14 substantially chirally pure (R)-isomer, a substantially chirally pure (S)-isomer, or a
15 mixture thereof.

16 34. A method of treating in a mammal a disease selected from the group consisting of
17 inflammatory disease and autoimmune disease, which comprises administering
18 thereto an effective amount of a compound according to claim 5, which compound
19 is a substantially chirally pure (R)-isomer, a substantially chirally pure (S)-isomer,
20 or a mixture thereof.

21 35. A method according to claim 34, wherein the disease is at least one member
22 selected from the group consisting of arthritis, rheumatoid arthritis, inflammatory
23 bowel disease, Crohn's disease, aphthous ulcers, cachexia, graft versus host

1 disease, asthma, COPD, psoriasis, stopic dermatitis, Lupus, adult respiratory
2 distress syndrome, and acquired immune deficiency syndrome

3 36. A method of treating cancer in a mammal which comprises administering thereto
4 an effective amount of a compound according to claim 5, which compound is a
5 substantially chirally pure (R)-isomer, a substantially chirally pure (S)-isomer, or a
6 mixture thereof.

7 37. A method of treating undesirable angiogenesis in a mammal which comprises
8 administering thereto an effective amount of a compound according to claim 5,
9 which compound is a substantially chirally pure (R)-isomer, a substantially chirally
10 pure (S)-isomer, or a mixture thereof.

11 38. A method of inhibiting undesirable levels of phosphodiesterase type IV in a
12 mammal which comprises administering thereto an effective amount of an
13 acylhydroxamic acid derivative according to claim 5, which derivative is a
14 substantially chirally pure (R)-isomer, a substantially chirally pure (S)-isomer, or a
15 mixture thereof.

16 39. A method of treating dermal diseases in a mammal which comprises
17 administering thereto an effective amount of an acylhydroxamic acid derivative
18 according to claim 5, which derivative is a substantially chirally pure (R)-isomer, a
19 substantially chirally pure (S)-isomer, or a mixture thereof.

20 40. An acylhydroxamic acid derivative according to claim 10 wherein acyl contains a
21 carbonyl group and alkyl of 1 to 6 carbon atoms, phenyl, benzyl, pyridylmethyl,
22 pyridyl, imidazoyl, imidazolylmethyl, or $CHR^*(CH_2)_nNR^*R^0$, wherein R^* and R^0 ,
23 independently of the other, are hydrogen, alkyl of 1 to 6 carbon atoms, phenyl,

1 benzyl, pyridylmethyl, pyridyl, imidazoyl or imidazolylmethyl,
2 and n = 0, 1, 2.